Remarks

Claims 1-24 are currently pending in this application. Claims 1 and 15 are currently amended. Claims 15-20 are currently allowed. Claims 21-24 are new.

Claim Objections

5   Claim 1 was objected to as lacking antecedent basis for the "acquisition mode transition" in line 13. The Applicant traverses this rejection and respectfully points out that "acquisition mode transition" is first used in line 11 of Claim 1. This use provides proper antecedent basis for the phrase objected to by the Examiner. The fact that the use in line 11 is preceded by the word "data" does not prevent antecedent basis from being

10   established.

Claim 1 was also objected to on the grounds that antecedent basis was lacking for "the data acquisition mode change" in lines 14-15. The Examiner states "[i]t appears that the term 'change' should be 'transition'." In response to the Examiner's objection, the applicant has amended Claim 1 to replace the term "change" with "transition." However,

15   the Applicant notes that the amendment does not change the clear meaning of the claim and is not statutorily required. As illustrated by the Examiner's statement, it is clear that the language as filed was intended to refer to a data acquisition mode transition. Thus, the amendment is not made to affect the allowability of the claim.

Claims 2 and 14 are objected to because of a lack of antecedent basis for the

20   phrase "acquisition mode transition." The Applicant traverses this objection and points out that the phrase is used several times in Claim 1 from which Claim 2 depends, and the phrase is used on lines 8, 12/13, and 17 of Claim 10 from which Claim 14 depends.

The Examiner objects to Claims 7-10, 12 and 14. The Examiner states that these objections are made

> because the limitations in lines 3-11 of claim 7 all of claim 9, lines 13-18 of claim 10, line 2 of claim 12 and all of claim 14 constitute functional descriptive
>
> ... material that is not structurally limiting without a computer and computer readable medium: "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium ... since use of technology permits the function of the descriptive material to be realized." MPEP § 2106 IV(B)(1). As such, the above limitations are not afforded patentable weight.

The Applicant traverses this statement and these objections.

The Examiner appears to be taking a position that functional limitations must be embodied on computer-readable media in order to be "afforded patentable weight." This position is not supported by the section of the MPEP quoted by the Examiner. Specifically, the section cited supports the concept that a claim including purely functional limitations embodied on computer-readable media, may result in patentable subject matter. It does not suggest that functional limitations in other contexts, such as the pending system claims, should not be given full consideration. To the contrary, the Court of Customs and Patent Appeals has specifically taken a position that functional language is not per se improper.

> We take the characterization 'functional' ... to indicate nothing more than the fact that an attempt is being made to define something ... by what is does rather than by what it is (as evidenced by specific structure or material, for example). In our view, there is nothing intrinsically wrong with the use of such a technique in drafting patent claims. Indeed we have even recognized in the past the practical necessity for the use of functional language. (439 F.2d at 212-213, 169 USPQ 228-29).

Further, [w]hen evaluating the scope of a claim, every limitation in the claim must be considered. (*Diamond v. Diehr*).

The Applicants, therefore request that the Examiner withdraw the objections to claims 7-10, 12 and 14.

Claim Rejections under 35 USC § 112

Claim 8 is rejected under 35 USC § 112, second paragraph, "as being incomplete for

5   omitting essential structural cooperative relationships of elements, such omission

amounting to a gap between the necessary structural connections. See MPEP § 2172.01."

Specifically, the Examiner states "[t]he omitted structural cooperative relationships are:

the interrelationship between the flushing requirements of the array of integrating sensors

and the remainder of the claimed structure."

10   MPEP § 2172.01 states:

> A claim which omits matter disclosed to be essential to the invention as described
> in the specification or in other statements of record may be rejected under 35
> U.S.C. 112, first paragraph, as not enabling. In re Mayhew, 527 F.2d 1229, 188
> USPQ 356 (CCPA 1976). See also MPEP § 2164.08(c). Such essential matter
15   > may include missing elements, steps or necessary structural cooperative
> relationships of elements **described by the applicant(s) as necessary to practice**
> **the invention**. (emphasis added.)

It is the position of the Applicant that Claim 8 satisfies the requirements of MPEP

20   § 2172.01. In the current rejection, the Examiner suggests that the omitted relationships

are "the interrelationship between the flushing requirements of the array of integrating

sensors and the remainder of the claimed structure." However, MPEP § 2172.01 applies

only to relationships "described by the applicant(s) as necessary to practice the

invention." The Applicant has not described a particular relationship between "the

25   flushing requirements of the array of integrating sensors and the remainder of the claimed

structure" as being "necessary to practice the invention." Therefore, the Examiner's

suggested omission of any such relationships does not violate the requirements of MPEP § 2172.01.

Claim 8 is further rejected under § 112 second paragraph "as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Examiner states "[t]he limitation of 'the X-ray detector device' lacks proper antecedence since the limitation is not positively recited in the claims; instead, it appears as part of a functional limitation in line 2 of claim 7."

The Applicant traverses this rejection. First, as discussed above with regard to the objection to Claims 7-10, 12 and 14, it has been well established by the applicable case law that functional language must be given full consideration. Therefore, the use of "an x-ray detector device" in line 2 provides antecedent basis for the phrase "the x-ray detector device" in Claim 8. The Applicant, therefore, requests that the Examiner withdraw the rejection of Claim 8 under § 112.

Second, the Examiner appears to be making a distinction between limitations that are "positively recited" and "not positively recited." The Applicant is unable to find any statutory support for such a distinction. The Applicant, therefore, requests that the Examiner point out a basis for such a distinction or withdraw the rejection of Claim 8 under § 112.

Claim Rejections under 35 USC § 102

Claims 1-14 are rejected under 35 USC 102(b) as being anticipated by Ganin (US Patent No. 6,459,765 B1).

Regarding Claim 1,

Claim 1 recites:

1. (Currently Amended) A detector device comprising:
    a sensor array configured to detect x-rays;
    an internal sync pulse source configured for flushing the sensor array;
    an internal clock configured for triggering the internal sync pulse source to
5   *generate an internal sync pulse;*
    an external sync input configured for triggering the internal sync pulse source to
        generate the internal sync pulse;
    a ready signal output configured to indicate when the internal sync pulse is
        generated responsive to the internal clock and when the internal sync
10   *pulse can be generated responsive to the external sync input; and*
    an input configured for initiating a data acquisition mode transition, the internal
        sync pulse being generated using the internal clock during at least part of
        the acquisition mode transition, the internal sync pulse being generated
        using the external sync input following to the data acquisition mode
15   *transition.*

In rejecting Claim 1, the Examiner states "Ganin discloses ... b) an internal sync

pulse source configured for flushing the sensor array (represented by 'Detector Readout'

line in Fig. 2)." The Applicant is able to identify the "Detector Readout" signal trace in

20   Fig. 2, however, the Applicant is unable to identify any teaching that this signal is the

result of *"an internal sync pulse source configured for flushing the sensor array,"* as

recited in Claim 1. To the contrary, at Col. 6 lines 49-59 Ganin teaches that the signal

referred to by the Examiner is generated by "a clock in controller 36," and in Fig. 1 of

Ganin, element 36 is not shown to be internal to a detector device. The Applicant,

25   therefore, requests that the Examiner more specifically point out how Ganin teaches an

"an internal sync pulse source," as recited in Claim 1, or allow Claim 1 and those claims

that depend therefrom.

In addition, the Applicant is unable to identify any teaching within the cited art

relating to *"flushing"* of *"a sensor array."* Ganin does not appear to include the term

30   "flush" in any form. The Applicant, therefore, specifically requests that the Examiner

specifically point out how Ganin teaches "*an internal sync pulse source configured for flushing the sensor array*," or allow Claim 1 and those claims that depend therefrom.

Further, in rejecting Claim 1, the Examiner states "Ganin discloses ... c) an internal clock ... (col. 6, lines 49-51)." While Ganin does teach a clock in the cited text, this clock is within a separate "controller 36" (line 52) and, thus, is not internal to the detector device. Ganin, therefore, does not teach, "*an internal clock configured for triggering the internal sync pulse source to generate an internal sync pulse*," as recited in Claim 1.

Further, in rejecting Claim 1, the Examiner states "Ganin discloses ... d) an external sync input 38 configured for triggering the internal sync pulse source to generate the internal sync pulse." The Applicant is unable to find any such teaching in the cited art. Element 38 of Fig. 1 is labeled "OPERATOR INTERFACE" and at Col. 3 line 2 Ganin teaches "an operator interface panel 38." Neither of these two teachings appear to be related to "*an external sync input configured for triggering the internal sync pulse source to generate the internal sync pulse*," as recited in Claim 1. First, there is no basis for equating an "interface panel" with "*an external sync input.*' Second, there is no teaching that an "interface panel" is "*configured for triggering the internal sync pulse source*." The Applicant, therefore, requests that the Examiner more particularly point out those teachings of the cited art that are believed to teach "*an external sync input configured for triggering the internal sync pulse source to generate the internal sync pulse*," or allow Claim 1 and those claims that depend therefrom.

Further, in rejecting Claim 1, the Examiner states "Ganin discloses ... e) a ready signal output (step 4 at time T2) configured to indicate when the internal sync pulse is

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generated responsive to the internal clock and when the internal sync pulse can be generated responsive to the external sync input." While the Applicant is able to identify time T2 in Fig. 2 of Ganin, the Applicant is unable to identify any signal associated with that time. At Col. 6 lines 55-57, Ganin teaches "[i]n step 4, at time T2, the preparation

5   time is completed, and the system is ready to generate the Pre-shot sequence of steps." Thus, rather than being a time of a ready signal output, time T2 appears to be merely the end of a preparation time, not necessarily associated with any signal. The Applicant, therefore, requests that the Examiner specifically point out a teaching of *"a ready signal output"* within the cited art, or allow Claim 1 and those claims that depend therefrom.

10   In addition, the *"ready signal output"* recited in Claim 1 is *"configured to indicate when the internal sync pulse is generated responsive to the internal clock and when the internal sync pulse can be generated responsive to the external sync input."* The Applicant is unable to identify any teaching in the cited art that anything at time T2 is related to indicating *"when the internal sync pulse is generated responsive to the internal*

15   *clock"* or *"when the internal sync pulse can be generated responsive to the external sync input."* For example, even assuming for the sake of argument that the "DETECTOR READOUT" of Ganin Fig. 2 is related to a sync pulse, there is no teaching that this sync pulse is generated responsive to an external sync input at some times and generated responsive to an internal clock at other times. The Applicant, therefore, requests that the

20   Examiner more specifically point out teachings within the cited art of a *"ready signal output"* that is configured as characterized in Claim 1, or allow Claim 1 and those claims that depend therefrom.

Further, in rejecting Claim 1, the Examiner states

Ganin discloses ... f) an input 41 configured for initiating a data acquisition mode transition (Fig. 2, step 5), where the internal sync pulse is generated using the internal clock during at least part of the data acquisition mode transition (see top line of Fig. 2 between time T2 and step 11), and further where the internal sync pulse is generated using the external sync input 38 following the data acquisition mode transition.

The Applicant traverses this statement.

First, Ganin teaches that element 41 is "an exposure switch 41." The Applicant is unable to identify any teaching within Ganin that this "exposure switch" is configured to initiate a "*data acquisition mode transition*" as recited in Claim 1. Rather, Ganin appears to be silent with respect to having more than one data acquisition mode, much less transitions between data acquisition modes. The Applicant, therefore, requests that the Examiner specifically point out "*an input configured for initiating a data acquisition mode transition*," or allow Claim 1 and those claims that depend therefrom.

Second, Fig. 2, Step 5 of Ganin is taught to be the generation of a "start sequence command," which causes a data acquisition sequence to commence, (See Ganin at Col. 6 58-67). The Applicant is unable to identify any teaching that the start sequence command is also configured to initiate "*a data acquisition mode transition*," as recited in Claim 1. The Applicant respectfully points out that it would be impractical to use the same signal to start data acquisition and also change data acquisition modes. The Applicant, therefore, requests that the applicant specifically point out how the "start sequence command" of Ganin is configured to initiate "*a data acquisition mode transition*," or allow Claim 1 and those claims that depend therefrom.

Third, the Examiner suggests that the "DETECTOR READOUT" of Ganin Fig. 2 is generated using the element 38, which is taught to be an operator interface panel (not a "sync input"). The Applicant is unable to identify any teaching within the cited art that

the "DETECTOR READOUT" is generated by the operator interface panel. Rather, in

Fig. 2, the "DETECTOR READOUT" appears to be a regular signal as may be generated

by a clock. Any input from the operator interface panel would be asynchronous with the

"DETECTOR READOUT" and, thus, could not be generated using the operator interface

5   panel. Further, the "DETECTOR READOUT" is a repeated signal, if generated through

the operator interface panel a user would have to repeatedly activate an input during a

data acquisition. The Applicant, therefore, requests that the Examiner specifically point

out *"the internal sync pulse being generated using the internal clock during at least part*

of the acquisition mode transition, the internal sync pulse being generated using the

10   *external sync input following to the data acquisition mode transition,"* as recited in Claim

1, or allow Claim 1 and those claims that depend therefrom.

Regarding Claim 2, the Applicant believes that Claim 2 is allowable for at least the

same reasons as Claim 1 from which it depends.

Regarding Claim 3,

15   Claim 3 recites:

3. (Original) The detector device of claim 1, wherein internal sync pulse is generated
     using the external sync input prior to the data acquisition mode transition.

In rejecting Claim 3, the Examiner states, "the internal sync pulse is generated

20   using the external sync input prior to the data acquisition mode transition (Fig. 2, step

5)." The Applicant traverses this statement.

In rejecting Claim 1, the Examiner states that the internal sync pulse is taught by

the "DETECTOR READOUT," and the "DETECTOR READOUT" is generated by

element 36, which is a "system controller." The Applicant is unable to identify any

25   teaching within the cited art that the generator of the "DETECTOR READOUT" changes

at any time during the sequence illustrated by Fig. 2. Rather, the "DETECTOR

READOUT" does not appear to change at either step 4 or step 5. The Applicant is

further unable to identify any teaching in the cited art of when the "DETECTOR

READOUT" changes from being generated by the system controller to being generated

5   by the exposure switch 41, as suggested by the Examiner. Rather, the "DETECTOR

READOUT" appears to be generated by a "clock in controller 36" (Col. 6 lines 51-52)

during the entire sequence illustrated by Fig. 2 of Ganin. The Applicant, therefore,

requests that the Examiner specifically point out teaching of a change in the generation of

"DETECTOR READOUT" and that this generation occurs prior to a "data acquisition

10   mode transition," or allow Claim 3.

The Applicant further believes that Claim 3 is allowable for at least the reasons

discussed herein with respect to Claim 1, from which it depends.

Regarding Claim 4,

Claim 4 recites:

15   *4. (Original) A detector device comprising:*
       an internal clock;
       a sensor array configured to acquire data in a first data acquisition mode and to
            acquire data in a second data acquisition mode;
       an input configured for initiating a data acquisition mode change between the
20   *first data acquisition mode and the second data acquisition mode; and*
       an electronic circuit configured for flushing the sensor array responsive to the
            internal clock during at least part of the acquisition mode change and
            configured for flushing the sensor array responsive to an external signal
            prior to the data acquisition mode change.
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In rejecting Claim 4, the Examiner states, "Ganin discloses ... an input 38

configured to for initiating a data acquisition mode change between the first data

acquisition mode and the second data acquisition mode." The Applicant traverses this

statement. As discussed above with respect to Claim 1, the operator interface panel 38 of

Ganin is not taught to be *"an input configured for initiating a data acquisition mode change between the first data acquisition mode and the second data acquisition mode."* Therefore, it is the Applicant's position that Claim 4 is allowable for at least the reasons discussed herein with respect to Claim 1.

In rejecting Claim 4, the Examiner further states, "Ganin discloses ... an electronic circuit 27, 36 configured for flushing the sensor array responsive to the internal clock during at least part of the data acquisition mode change and configured for flushing the sensor array responsive to an external signal 38 prior to the data acquisition mode change (see top line of Fig. 2 and at least col. 6, lines 47-57)." The Applicant traverses this statement.

Element 27 of Ganin is taught to be a "Detector Controller" and element 36 is taught to be the aforementioned "System Controller." However, neither of these elements appears to be *"an electronic circuit configured for flushing the sensor array,"* much less *"responsive to the internal clock during at least part of the acquisition mode change and configured for flushing the sensor array responsive to an external signal prior to the data acquisition mode change."* The Applicant is unable to identify any teaching within the cited art relating to *"flushing"* of *"a sensor array."* Ganin does not appear to include the term "flush" in any form. The Applicant therefore requests that the Examiner specifically point out all of these limitations within the cited art, or allow Claim 4 and those claims that depend therefrom.

Regarding Claim 5,

Claim 5 recites:

5. (Original) The detector device of claim 4, wherein the data acquisition mode change is performed in less than four data acquisition frames.

In rejecting Claim 5, the Examiner states, "the data acquisition mode change is performed in less than four data acquisition frames (see top line of Fig. 2, between timeframe C and step 11)." The Applicant traverses this statement.

5   It is unclear to the Applicant how the cited text is thought to teach the limitations of Claim 5. The Applicant is unable to determine what the Examiner believes constitutes a "data acquisition frame" in the teachings of Ganin.

Further, it is unclear to the Applicant why the Examiner believes the time between "timeframe C and step 11" represents a complete "data acquisition mode change" as

10   recited in Claim 5, rather than, for example, the time between step 7 and step 12, (assuming, for the sake of argument, that there is a data acquisition mode change taught by Ganin). In Fig. 2 of Ganin, it appears that the time between step 7 and step 12 is greater than four times anything within the teachings of Ganin that could be considered a data acquisition frame time. The Applicant, therefore, requests that the Examiner more

15   specifically point out what the Examiner believes is a *data acquisition frame* in the context of Ganin, and what teachings of Ganin represent a time required to complete a *data acquisition mode change*," or allow Claim 5.

The Applicant also notes that the traces included in Fig. 2 of Ganin include hash marks. These marks are normally used to indicate a break in the time scale. For

20   example, the trace labeled "TIME" includes three pairs of hash marks, one of which is between timeframe C and step 11. Thus, Fig. 2 cannot be used to determine a time between timeframe C and step 11 as suggested by the Examiner.

The Applicant further believes that Claim 5 is allowable for at least the reasons

discussed herein with respect to Claim 4, from which it depends.

Regarding Claim 6, the Applicant believes that Claim 6 is allowable for at least the

reasons discussed herein with respect to Claim 4, from which it depends.

5   **Regarding Claim 7,**

Claim 7 recites:

> *7. (Original) A control system comprising:*
>   *an interface configured for communication with an x-ray detector device; and*
>   *computer instructions configured for communicating through the interface, the*
> 10   *communication including*
>   *an output signal configured to control frame start times of the x-ray*
>   *detector device,*
>   *an output signal configured to initiate a data acquisition mode transition*
>   *of the x-ray detector device,*
> 15   *an input signal, from the detector device, configured to indicate whether*
>   *the frame start times are dependent or independent of the output*
>   *signal configured to control frame start times.*

In rejecting Claim 7, the Examiner states, "Ganin discloses …b) an output signal

20   (Fig. 2, "Start Sequence") configured to initiate a data acquisition mode transition of the

X-ray detector device." The Applicant traverses this statement.

First, Fig. 2 of Ganin includes at least two different "START SEQUENCE"

events, one associated with step 5 and one following step 10. Assuming for the sake of

argument that the illustrated "START SEQUENCE" was an output *"configured to initiate*

25   *a data acquisition mode transition of the x-ray detector device,"* this would imply that the

process of Fig. 2 included two different data acquisition mode transitions. However, as

discussed elsewhere herein, Ganin does not appear to teach a single data acquisition

mode transition, much less two such transitions. Further, it is unclear to the Applicant

how two such transitions would work in the context of Ganin or what their purpose

would be. The Applicant, therefore, requests that the Examiner clarify what he believes are the data acquisition mode transitions that result from each of the two "START SEQUENCE" events illustrated in Fig. 2, or allow Claim 7, and those claims that depend therefrom.

5   Second, the instance of "START SEQUENCE" associated with step 5 in Fig. 2 of Ganin appears to be before any data acquisition, e.g., before either steps 7 and 14. As such, it does not appear that the "START SEQUENCE" is configured to initiate a data acquisition mode transition as suggested by the Examiner. The Applicant, therefore, requests that the Examiner provide support for the suggestion that the "START

10   SEQUENCE" is *"an output signal configured to initiate a data acquisition mode transition of the x-ray detector device,"* as recited in Claim 7, or allow Claim 7 and those claims that depend therefrom.

          Further, in rejecting Claim 7, the Examiner states, "Ganin discloses ... c) an input signal (Fig. 2 step 4) from the detector device, configured to indicate whether the frame

15   start times are dependent or independent upon the output signal configured to control the frame start times." The Applicant traverses this statement.

          First, as discussed above, there does not appear to be a specific signal at step 4 of Ganin. Step 4 appears to be merely a conclusion of a "PREPARATION TIME."

          Second, assuming for the sake of argument that there were a signal at step 4, the

20   Examiner provides no support for the suggestion that this signal is *"configured to indicate whether the frame start times are dependent or independent of the output signal configured to control frame start times."* The Applicant, therefore, requests that the Examiner specifically point out teaching of these limitations within the cited art, or allow

Claim 7, and those claims that depend therefrom. The Applicant respectfully reminds the Examiner that by not pointing out teaching of these limitations within the cited art, a prima facie case for the rejection of Claim 7 under §102 has not been made.

Further, in rejecting Claim 7, the Examiner states:

5   Per the claim objection above, the only limiting structure in this claim is the requirement of an interface that communicates with the X-ray detector, and the functional limitations of the communication methodology are not structurally tied to the interface. Therefore, the claim is anticipated by Ganin.

10   The Applicant traverses this statement. As discussed above, the Examiner appears to be ignoring functional language without statutory basis, and in direct contradiction to established case law. The Applicant requests that the Examiner provide a basis for ignoring functional language within a system claim to a control system, or allow Claim 7 and those claims that depend therefrom.

15   **Regarding Claim 8,**

Claim 8 recites:

8. (Original) The control system of claim 7, wherein the x-ray detector device includes an array of integrating sensors requiring flushing.

20   In rejecting Claim 8, the Examiner states, "the X-ray detector device includes an array of integrating sensors requiring flushing." However, the Examiner provides no citation within Ganin to support this statement. As discussed above, there is no discussion of flushing in Ganin. The Applicant, therefore, requests that the Examiner specifically point out teaching within Ganin of *"an array of integrating sensors requiring*

25   *flushing,"* or allow Claim 8. The Applicant respectfully reminds the Examiner that by not pointing out teaching of these limitations within the cited art, a prima facie case for the rejection of Claim 8 under §102 has not been made.

Regarding Claim 9,

Claim 9 recites:

> 9. (Original) The control system of claim 7, wherein the computer instructions are
> configured to control the x-ray detector device in a master-slave relationship
> prior to the data acquisition mode transition, and to reestablish the master-slave
> relationship following the data acquisition mode transition.

In rejecting Claim 9, the Examiner states:

> the interface is further able to be configured to perform the function of controlling
> the X-ray detector device in a master/slave relationship prior to the data
> acquisition mode transition and to re-establish the relationship following data
> acquisition mode transitions (after step 15).

The Applicant traverses this statement. The Applicant is unable to identify any

such teaching in the prior art. Specifically, Ganin does not appear to discuss anything

that could be interpreted as reestablishing a *"master-slave relationship."* Step 15 is

discussed at Col. 7 lines 15-17 of Ganin. This step merely includes "during the

generation of signal 50, light 43 is illuminated," and there is no discussion in Ganin of

what may occur after step 15. The Applicant, therefore, requests that the Examiner

specifically point out teaching of a *"master-slave relationship,"* and *"to reestablish the*

master-slave relationship following the data acquisition mode transition," within the

cited art, or allow Claim 9.

Regarding Claim 10,

Claim 10 recites:

> 10. (Original) An x-ray system comprising:
> a detector device including
> an array of sensors configured to detect x-rays,
> an output configured to indicate when an external sync input can be used
> to trigger internal sync pulses for indicating frame starts, and
> an internal circuit configured to flush the array of sensors responsive to
> an internal clock, the internal clock configured to trigger the

> internal sync pulses during at least part of a data acquisition mode
> change; and
> a control system including
>   data storage configured to store x-ray data generated using the detector
>   device,
>   computer instructions configured to initiate the data acquisition mode
>   change,
>   an output configured to provide the external sync input to the detector
>   device,
>   an input configured to monitor the output of the detector device and detect
>   the completion of the data acquisition mode change.

In rejecting Claim 10, the Examiner states "Ganin discloses ... b) an output (step 5) configured to indicate when an internal sync input can be used to trigger internal sync pulses for indicating frame starts." The Applicant traverses this statement.

First, the teaching suggested by the Examiner does not read on the limitations of Claim 10. Claim 10 recites "*an output configured to indicate when an <u>external sync input</u> can be used to trigger internal sync pulses for indicating frame starts.*" As such, the Examiner has not pointed out the above limitations within the cited art and has not made a prima facie case for rejection under §102.

Second, as discussed above, the Applicant is unable to identify any teaching within Ganin that the "START SEQUENCE" at step 5 is "*configured to indicate when an external sync input can be used to trigger internal sync pulses for indicating frame starts.*" The Applicant, therefore, requests that the Examiner specifically point out such teachings, or allow Claim 10 and those claims that depend therefrom.

Third, the Examiner has failed to point out "internal sync pulses" that are both triggered by an internal clock and triggered by an "external sync input," as recited in Claim 10. The Applicant requests that the Examiner point out such teachings or allow Claim 10, and those claims that depend therefrom.

In rejecting Claim 10, the Examiner further states "Ganin discloses ... c) an internal circuit 36 configured to flush the array of sensors responsive to an internal clock (col. 6, lines 49-51) that triggers the internal sync pulses during at least a portion of a data acquisition mode change (top line, Fig. 2)." The Applicant traverses this statement.

First, as discussed above, Ganin is silent as to flushing of sensors.

Second, the only clock taught in Ganin is discussed at col. 6, lines 49-51, this text states, "[a]s shown in the first line of FIG. 2, scrubs-idle frames are continuously generated by a clock in controller 36." This text specifically states that the clock is "in controller 36." In contrast, Claim 10 recites, "*a detector device including ... an internal circuit configured to flush the array of sensors responsive to an internal clock*." The clock of Claim 10 is, thus, internal to the detector device and not in a controller 36 as taught in Ganin. The Applicant, therefore, requests that the Examiner specifically point out a teaching of a clock internal to a detector device within the cited art, or allow Claim 10, and those claims that depend therefrom.

In rejecting Claim 10, the Examiner states further "Ganin discloses ... a control system ... hav[ing] an input configured to monitor the output of the detector device and detect the completion of the data acquisition mode change (col. 6)." The Applicant traverses this statement.

First, as stated above, the Examiner has failed to explicitly point out what he considers to be the "data acquisition mode change" as taught in Ganin. As such, it is unclear as to what teaching of Ganin the Examiner believes includes "*an input configured to monitor the output of the detector device and detect the completion of the data acquisition mode change*." The Applicant, therefore, requests that the Examiner

specifically point out what input of Ganin is configured to *"monitor the output of the detector device and detect the completion of the data acquisition mode change,"* or allow Claim 10 and those claims that depend therefrom.

Regarding Claims 11 and 12, the Applicant believes that Claims 11 and 12 are allowable for at least the reasons discussed herein with respect to Claim 10, from which they depend.

Regarding Claim 13,

Claim 13 recites:

13. (Original) The x-ray system of claim 10, further including an x-ray source and mechanical control configured to move the x-ray source.

In rejecting Claim 13, the Examiner states, "the system further includes an X-ray source 15 and mechanical control configured to move the X-ray source (inherent feature of all X-ray systems, at least for calibration and alignment)." The Applicant traverses this statement.

A rejection based in inherency must meet the requirements of MPEP §2112, which provides that "[t]he fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic" citing In re Rijckaert, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993). Further, "[i]n relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art" citing Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990).

In the current rejection, the Examiner suggests that mechanical control is inherent to all X-ray systems. However, mechanical control is not a characteristic that "necessarily flows from the teachings of the applied prior art," as required by the established case law. For example, an X-ray system may be fixed while the patient is moved for alignment. The Examiner's inherency argument, therefore, does not meet the requirements of Ex parte Levy, and the Applicant requests that the Examiner point out an explicit teaching of *"mechanical control configured to move the x-ray source,"* or allow Claim 13.

The Applicant further believes that Claim 13 is allowable for at least the reasons discussed herein with respect to Claim 10, from which it depends.

Regarding Claim 14, the Applicant believes that Claim 14 is allowable for at least the reasons discussed herein with respect to Claim 9, and further at least the reasons discussed herein with respect to Claim 10, from which it depends.

Regarding Allowed Claim 15, Claim 15 is amended to correct a spelling mistake.

Regarding New Claims 21-24, new Claims 21-24 are dependent on allowed claims 15 and 17, and are believed to be allowable for at least this reason.

Applicant believes that all pending claims are allowable and respectfully requests

that the Examiner issue a Notice of Allowance. Should the Examiner have questions, the

Applicant's undersigned representative may be reached at the number provided.

Respectfully submitted,

Keith Gray

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Date: <u>July 18, 2006</u>

Steven M. Colby, Ph.D. Reg. No. 50,250

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Carr & Ferrell *LLP*
2200 Geng Rd.
Palo Alto, CA 94303
Phone (650) 812-3424
Fax (650) 812-3444

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